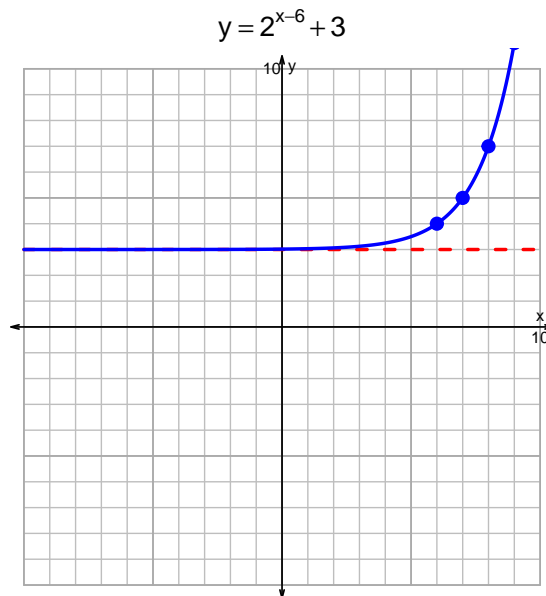
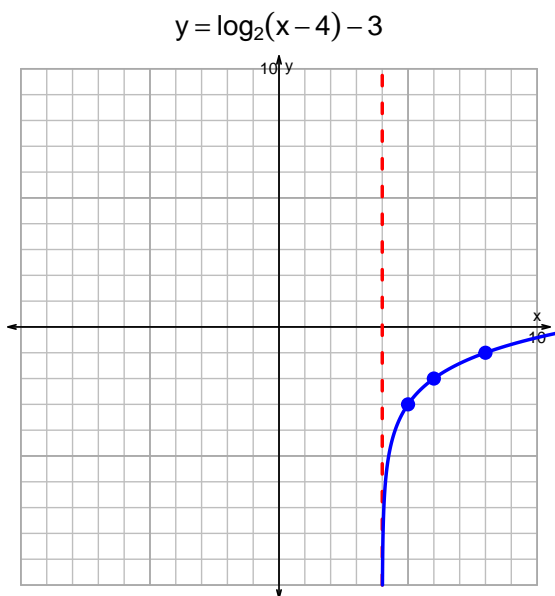


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v282)

1. Graph $y = \log_2(x - 4) - 3$ and $y = 2^{x-6} + 3$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-11 = \left(\frac{-4}{7}\right) \cdot 10^{-3t/5}$$

Divide both sides by $\frac{-4}{7}$.

$$\frac{11 \cdot 7}{4} = 10^{-3t/5}$$

Take log, base 10, of both sides.

$$\log_{10} \left(\frac{11 \cdot 7}{4} \right) = \frac{-3t}{5}$$

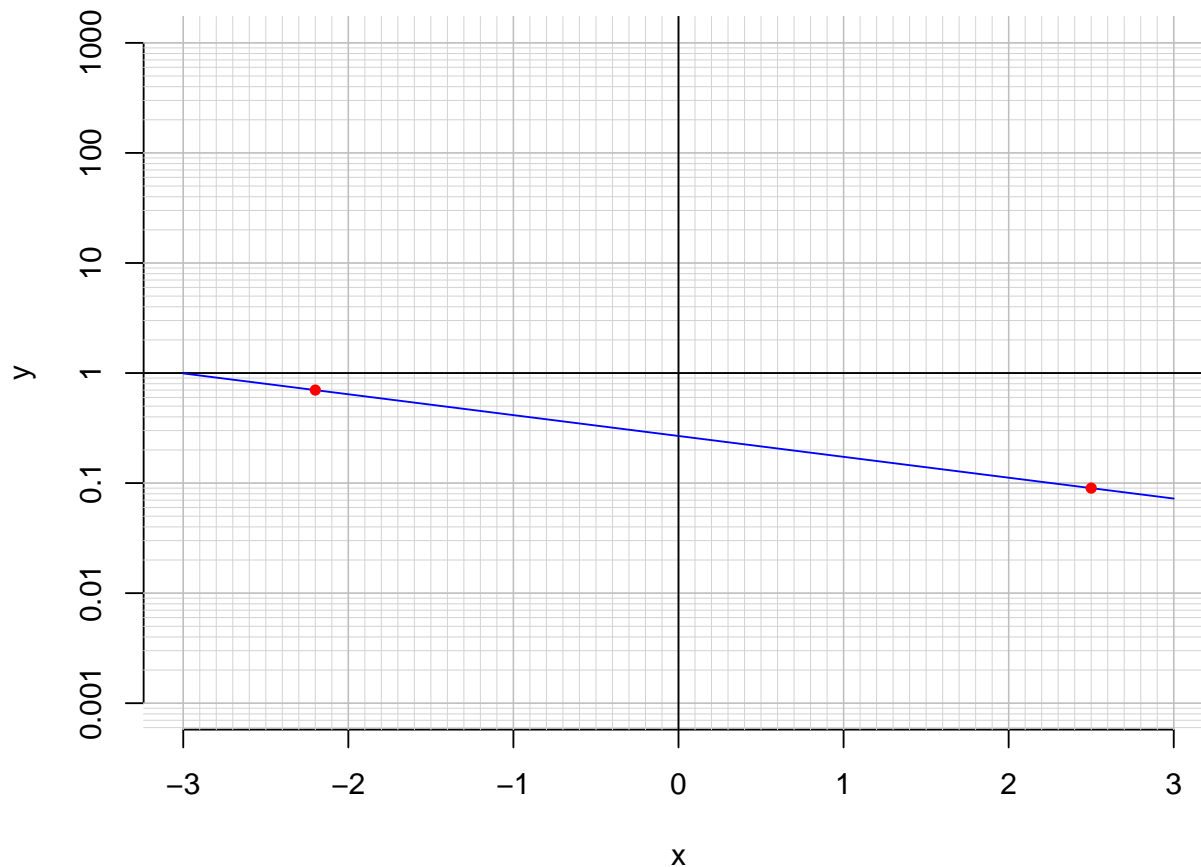
Divide both sides by $\frac{-3}{5}$.

$$\frac{-5}{3} \cdot \log_{10} \left(\frac{11 \cdot 7}{4} \right) = t$$

Switch sides.

$$t = \frac{-5}{3} \cdot \log_{10} \left(\frac{11 \cdot 7}{4} \right)$$

3. An exponential function $f(x) = 0.268 \cdot e^{-0.436x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(2.5)$.

$$f(2.5) = 0.09$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{-1}{0.436} \cdot \ln\left(\frac{x}{0.268}\right)$$

- c. Using the plot above, evaluate $f^{-1}(0.7)$.

$$f^{-1}(0.7) = -2.2$$